

## 101.10 - Stainless Steels (disk form)

Technical Contact: [john.sieber@nist.gov](mailto:john.sieber@nist.gov)

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SRM	1155a	1171	1172	1219	1223	1295	1297	C1151a	c1152a	C1153a	C1154a
<b>Description</b>	<b>Stainless Steel (Cr 18 Ni 12, Mo 2)</b>	<b>Stainless Steel Cr 17-Ni 11-Ti 0.3 (AISI 321)</b>	<b>Stainless Steel Cr 17-Ni 11-Nb 0.6 (AISI 348)</b>	<b>Cr16-Ni2 (AISI 431)</b>	<b>Chromium Steel</b>	<b>Stainless Steel (SAE 405)</b>	<b>Stainless Steel (SAE 201)</b>	<b>Stainless Steel 23Cr-7Ni</b>	<b>Stainless Steel 18Cr-11Ni</b>	<b>Stainless Steel 17Cr-9Ni</b>	<b>Stainless Steel 19Cr-13Ni</b>
<b>Unit of Issue</b>	(disk)	(disk)	(disk)	(disk)	(disk)	(disk)	(disk)	(disk)	(disk)	(disk)	(disk)

### Elemental Composition (mass fraction in %)

<b>Aluminum (Al)</b>	<0.01			(0.001)	<0.005	(0.20)	(0.003)	(0.003)	(0.004)	(0.004)	
<b>Arsenic (As)</b>	0.007					(0.006)	(0.005)				
<b>Bismuth (Bi)</b>	<0.0001										
<b>Boron (B)</b>	(0.002)			<0.001							
<b>Calcium (Ca)</b>					<0.0005						
<b>Carbon (C)</b>	0.0260	0.067	0.056	0.149	0.127	0.027	0.066	0.034	0.142	0.225	0.100
<b>Chromium (Cr)</b>	17.803	17.50	17.40	15.64	12.64	13.52	16.69	22.59	17.76	16.70	19.31
<b>Cobalt (Co)</b>	0.225	0.097	0.12	(0.04)		0.020	0.127	0.033	0.22	0.127	0.38
<b>Copper (Cu)</b>	0.2431	0.1205	0.105	0.162	0.081	0.260	0.442	0.385	0.097	0.226	0.44
<b>Iron (Fe)</b>	64.71										
<b>Lead (Pb)</b>	<0.005			<0.0001		(0.0001)	<0.0001	0.0039	0.0047	0.006	0.017
<b>Magnesium (Mg)</b>					<0.0005						
<b>Manganese (Mn)</b>	1.593	1.81	1.76	0.42	1.08	0.387	7.11	2.39	0.95	0.544	1.44
<b>Molybdenum (Mo)</b>	2.188	0.167	0.22	0.164	0.053	0.023	0.331	0.79	0.44	0.24	0.068
<b>Nickel (Ni)</b>	12.471	11.18	11.35	2.16	0.232	0.194	5.34	7.25	10.86	8.76	13.08

### Elemental Composition (mass fraction in %)

<b>Niobium (Nb)</b>			0.65	(0.01)		<0.0005	<0.009	(0.015)	(0.15)	(0.48)	(0.22)
<b>Nitrogen (N)</b>	0.0428			0.078	(0.05)			(0.21)	(0.055)	(0.11)	(0.077)
<b>Phosphorus (P)</b>	0.0271	(0.019)	0.025	0.026	0.018	0.022	0.038	0.017	0.023	0.030	0.06
<b>Silicon (Si)</b>	0.521	0.536	0.59	0.545	0.327	0.321	0.397	0.29	0.64	1.00	0.53
<b>Sulfur (S)</b>	0.0020	(0.013)	0.014	0.001	0.329	0.0003	0.0033	0.038	0.0064	0.019	0.051
<b>Tantalum (Ta)</b>	<0.0001		<0.001			<0.001	<0.001	(0.004)	(0.001)	(0.03)	(0.045)

- Certified values are normal font
- Reference values are italicized
- Values in parentheses are for information only

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### C1296

#### Stainless Steel

(disk)

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0.035

0.038

27.90

0.026

0.056

(<0.001)

0.256

3.43

0.373

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0.20

0.024

0.66

0.013

(<0.001)

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<b>Tin (Sn)</b>	<i>0.0069</i>		(0.008)	(0.004)	(0.02)	(<0.010)				
<b>Titanium (Ti)</b>	0.0039	0.346	(<0.001)		(0.01)	(<0.0004)			(0.013)	(0.004)
<b>Tungsten (W)</b>	0.0809	(0.012)	(0.02)		(0.002)	(0.03)				
<b>Vanadium (V)</b>	0.0725		0.056	0.068	0.082	0.080	0.040	0.033	0.176	0.135
<b>Zirconium (Zr)</b>	(<0.003)			(0.0001)					(0.0001)	(0.001)

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(<0.01)

0.23

(<0.01)

0.134

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